



May 22, 2015

Mr. Art Smith
On-Scene Coordinator
U.S. Environmental Protection Agency, Region 4
600 Dr. Martin Luther King, Jr. Place
Louisville, Kentucky 40202

**Subject: Final Emergency Response Letter Report
Derby Industries Fire
Louisville, Jefferson County, Kentucky
Contract Number: EP-54-14-03
TDD Number: TT-01-018**

Dear Mr. Smith:

The Tetra Tech, Inc. (Tetra Tech) Superfund Technical Assessment and Response Team (START) is submitting this letter report summarizing the response efforts for the Derby Industries Fire in Louisville, Jefferson County, Kentucky from April 3 to 5, 2015. This report includes two enclosures. Enclosure 1 contains figures illustrating the location of Derby Industries, as well as fixed and mobile particulate air monitoring locations. Enclosure 2 contains the particulate air monitoring data tables.

EXECUTIVE SUMMARY

On April 3, 2015, a fire was observed at Derby Industries, LLC (Derby Industries), located at 4000 Buechel Bank Road in Louisville, Jefferson County, Kentucky (see Figure 1 in Enclosure 1). Derby Industries operates the AP-6 facility at General Electric (GE) Appliance Park within Building 6 and furnishes plastic parts to GE for their manufacturing processes. U.S. Environmental Protection Agency (EPA) On-Scene Coordinator (OSC) Art Smith was dispatched to the seven alarm fire at the request of the Kentucky Department for Environmental Protection (KDEP). EPA OSC Smith requested assistance from the EPA Emergency Response Team (ERT) and Tetra Tech START to monitor air quality for levels of particulate matter with diameters of 2.5 micrometers or less (PM_{2.5}). The fire was extinguished on April 5, 2015, after which EPA OSC Smith, EPA ERT, and Tetra Tech START demobilized from the site.

BACKGROUND

On April 3, 2015, KDEP contacted EPA for assistance with air monitoring in response to a warehouse plastics fire in Building 6 located at the GE Appliance Park in Louisville, Jefferson County, Kentucky (see Figure 1 in Enclosure 1). EPA notified EPA ERT and Tetra Tech START for response assistance the same day. Derby Industries operates the AP-6 facility at GE Appliance Park and furnishes plastic parts to GE for their manufacturing processes. Derby Industries reportedly stored approximately one million pounds of acrylonitrile/butadiene/styrene (ABS) plastic compound material in Building 6 at the time of the incident. EPA ERT, KDEP, and Tetra Tech START conducted mobile PM_{2.5} air monitoring at various locations around the facility and stationary PM_{2.5} air monitoring at off-site locations downwind of the facility for the duration of the fire.

RESPONSE ACTIVITIES

Activities included mobile and fixed air monitoring, maintenance of air monitoring equipment, monitoring data collection, and monitoring data sharing among responding agencies throughout response.

April 3, 2015

A Unified Command was established for the fire response and a shelter-in-place evacuation was implemented for a 1-mile radius around the site. EPA OSC Smith requested the mobilization of EPA ERT and Tetra Tech START to conduct air monitoring for PM_{2.5} during the fire response activities. Following arrival at the command post located at GE Appliance Park, EPA OSC Smith was briefed by the Louisville Metropolitan Public Health Department (LMPHD) on initial air monitoring results. LMPHD reported that the only airborne compound detected in the smoke plume on site had been hydrogen chloride at approximately 1 part per million (ppm). All other measurements were below detection limits for various products of combustion, including hydrogen cyanide, sulfur oxides, and nitrogen oxides. Additional information regarding the constituents of the smoke plume was provided by the 41st National Guard (NG) Civil Support Team (CST). The NG CST detected trace amounts of butadiene and styrene.

After arrival at the site, EPA ERT and Tetra Tech START prepared four EPA DataRAMs to conduct mobile and stationary PM_{2.5} air monitoring. KDEP prepared their ADR-1500 particulate air monitor for deployment. EPA ERT also set-up the VIPER remote detection system to remotely monitor the PM_{2.5} levels for the duration of the fire response activities. Initially, EPA ERT and Tetra Tech START conducted mobile air monitoring at various locations around Building 6 and air monitoring at fixed locations in the staging area of the site parking lot. At approximately 19:30 hours, EPA ERT, Tetra Tech START, and KDEP deployed three DataRAMs and the ADR-1500 at fixed locations within residential and commercial areas downwind of the facility. Air monitoring activities continued throughout the night at the fixed locations and were monitored remotely using VIPER. Air monitoring equipment was also maintained by EPA ERT, KDEP, and Tetra Tech START throughout the night. Mobile and fixed air monitoring locations for EPA and KDEP units are provided in Figures 2 and 3 within Enclosure 1. Air monitoring data for EPA and KDEP units are provided in the air monitoring tables within Enclosure 2. Air monitoring data is reported in 1-hour and 24-hour time-weighted averages (TWA) for each air monitoring location. Each TWA was calculated by EPA ERT in accordance with the method presented in Codes of Federal Regulation (CFR), 29 CFR 1910.1000, Occupational Safety and Health Standards, Subpart Z, Toxic and Hazardous Substances, Air Contaminants.

April 4, 2015

EPA ERT and Tetra Tech START continued PM_{2.5} air monitoring at four off-site locations downwind of the site. The VIPER system and monitoring equipment was again maintained throughout the day and night of April 4, 2015. The fixed air monitoring locations were relocated twice during the day due to shifts in wind direction. At approximately 14:25 hours, EPA ERT and Tetra Tech START relocated the fixed air monitoring stations to assess two commercial properties, one school, and one residence. These monitoring stations were maintained throughout the day. At approximately 19:30 hours, EPA ERT and Tetra Tech START relocated the fixed air monitoring location from one of the commercial properties to an additional residential location. Fixed air monitoring locations for the EPA units relocated on April 4, 2015 are provided in Figure 4 in Enclosure 1. Air monitoring data collected on April 4, 2015 are provided in the air monitoring data tables within Enclosure 2.

April 5, 2015

At approximately 07:00 hours, EPA OSC Smith instructed EPA ERT to discontinue PM_{2.5} air monitoring at the fixed locations and to retrieve the deployed air monitoring units. At approximately 09:45 hours, EPA OSC Smith tasked EPA ERT to conduct mobile air monitoring at various residential locations and to continue fixed air monitoring at one commercial property downwind of the GE facility. Air monitoring readings indicated PM_{2.5} levels were within acceptable levels in accordance with EPA's Air Quality Index. Mobile and fixed air monitoring locations for April 5, 2015 are provided in Figures 5 and 6 within Enclosure 1. Air monitoring data collected on April 5, 2015, using EPA air monitoring units, are provided in the air monitoring data tables within Enclosure 2. At 12:30 hours, the Okolona Fire Department lifted the shelter-in-place evacuation after reviewing the mobile and stationary air monitoring results. EPA ERT, KDEP, and Tetra Tech START demobilized from the site on April 5, 2015.

If you have questions or require additional information, please contact Dale Von Busch at (502) 569-9069.

Sincerely,

Paul E. Prys II
Tetra Tech START IV Senior Scientist

Andrew F. Johnson
Tetra Tech START IV Program Manager

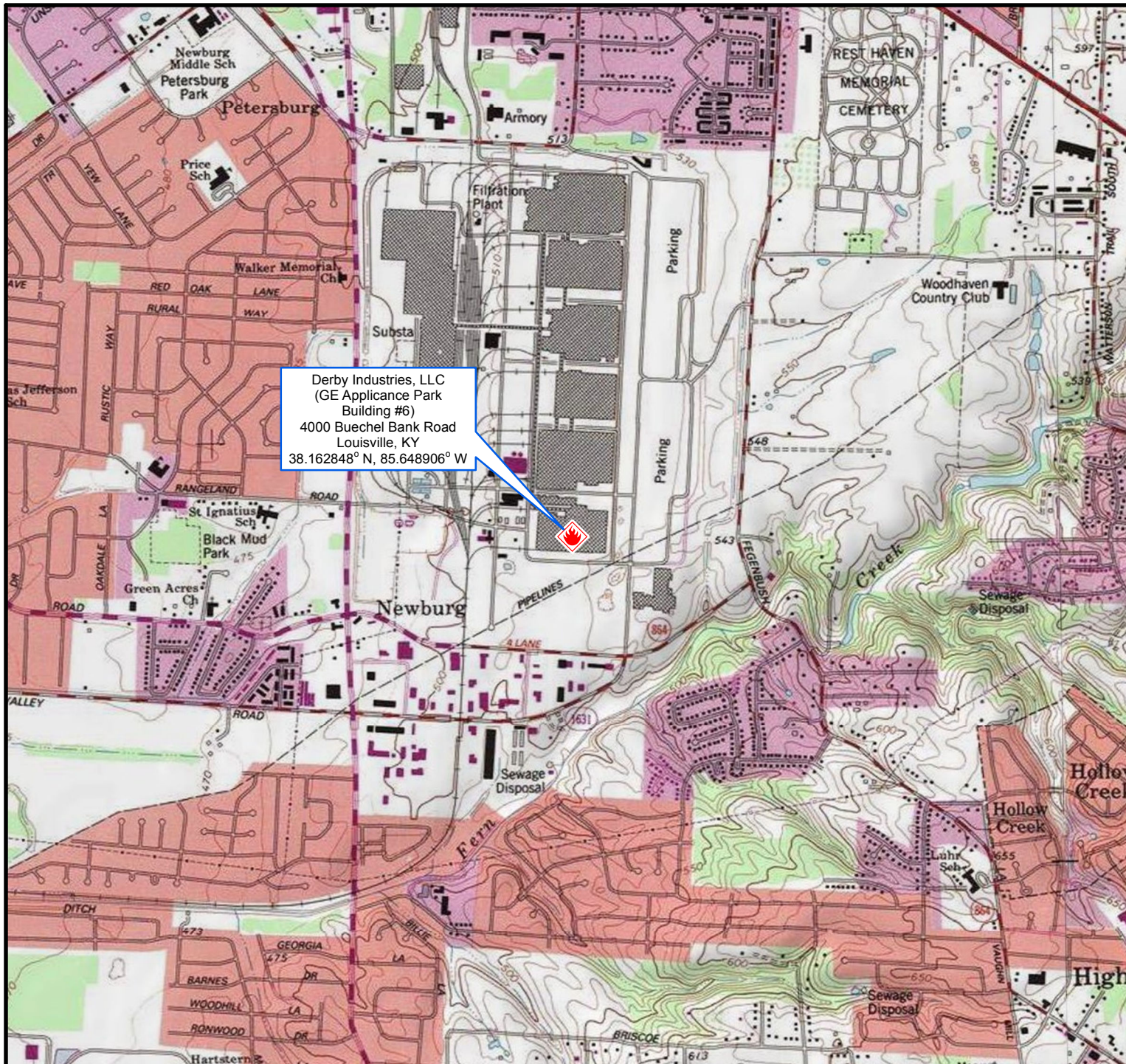
Enclosures (2)

cc: Katrina Jones, EPA Project Officer
Angel Reed, Tetra Tech START IV Document Control Coordinator

ENCLOSURE 1


FIGURES

(Six Pages)



Derby Industries, LLC
 (GE Appliance Park
 Building #6)
 4000 Buechel Bank Road
 Louisville, KY
 38.162848° N, 85.648906° W

Legend

 Approximate Fire Location



0 1,000 2,000
 Feet

Map Source:
 USGS 7.5 Minute Topographic Quadrangle Maps:
 Louisville East, KY 1994 & Jeffersonstown, KY 1994.



United States
 Environmental Protection Agency
 Region 4

FIGURE 1

Site Location

Project Name: Derby Industries Fire

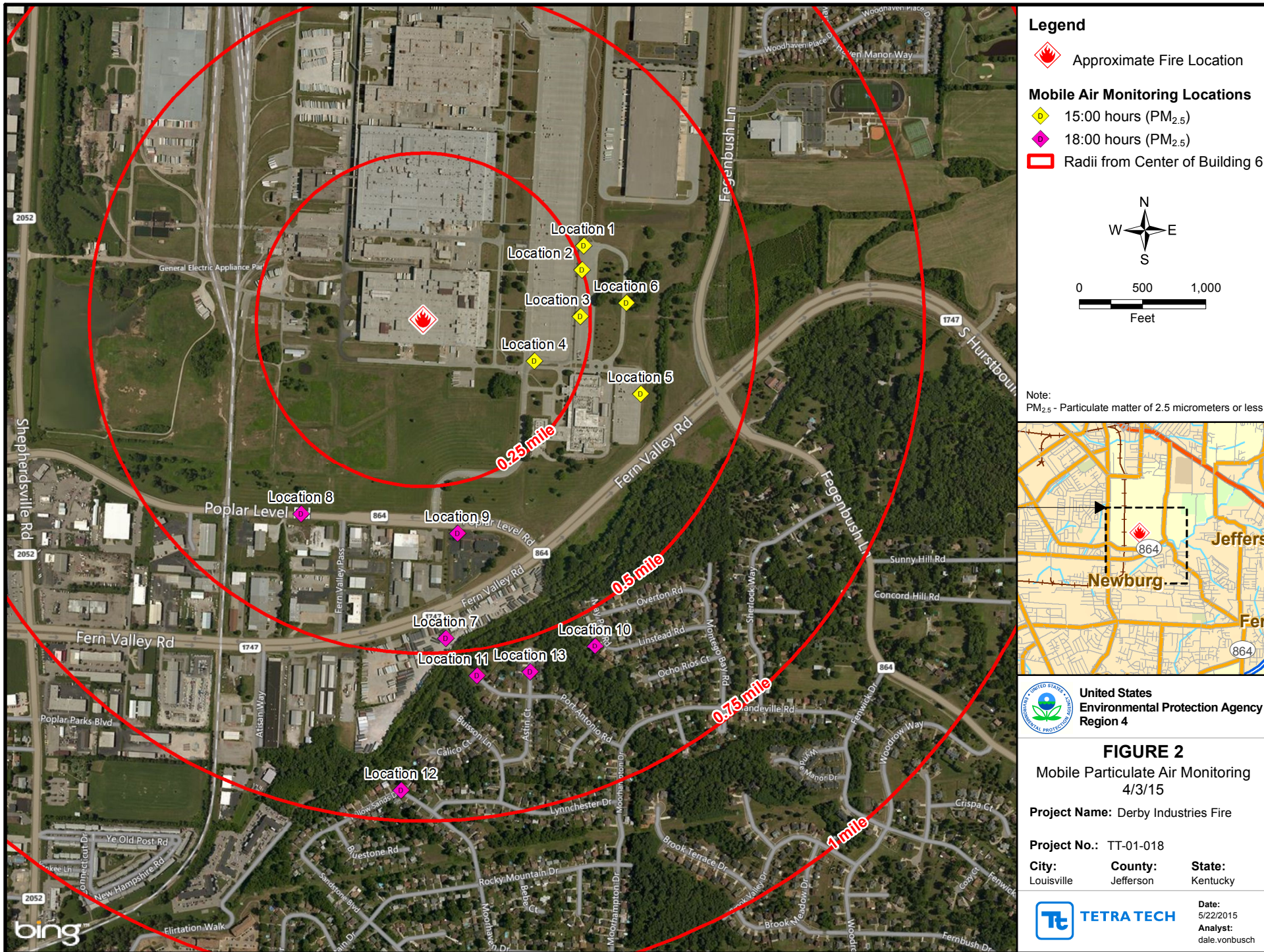
Project No.: TT-01-018

City: Louisville	County: Jefferson	State: Kentucky
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TETRA TECH

Date:
 5/22/2015
 Analyst:
 dale.vonbusch





Legend



Approximate Fire Location

Fixed Air Monitoring Locations



EPA DataRAM (PM_{2.5})



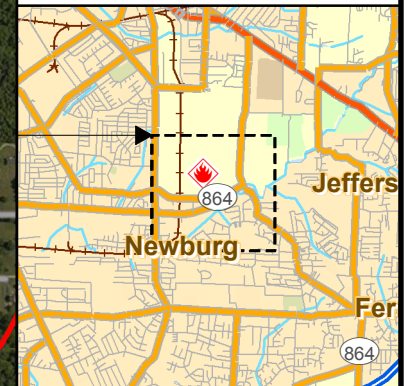
KDEP ADR-1500 (PM₁₀)

Red outline representing Radii from Center of Building 6



0 500 1,000
Feet

Notes:
EPA - United States Environmental Protection Agency
KDEP - Kentucky Department for Environmental Protection
PM_{2.5} - Particulate matter of 2.5 micrometers or less
PM₁₀ - Particulate matter of 10 micrometers or less



United States
Environmental Protection Agency
Region 4

FIGURE 3

Fixed Particulate Air Monitoring
4/3/15 - 4/4/15

Project Name: Derby Industries Fire

Project No.: TT-01-018

City:
Louisville

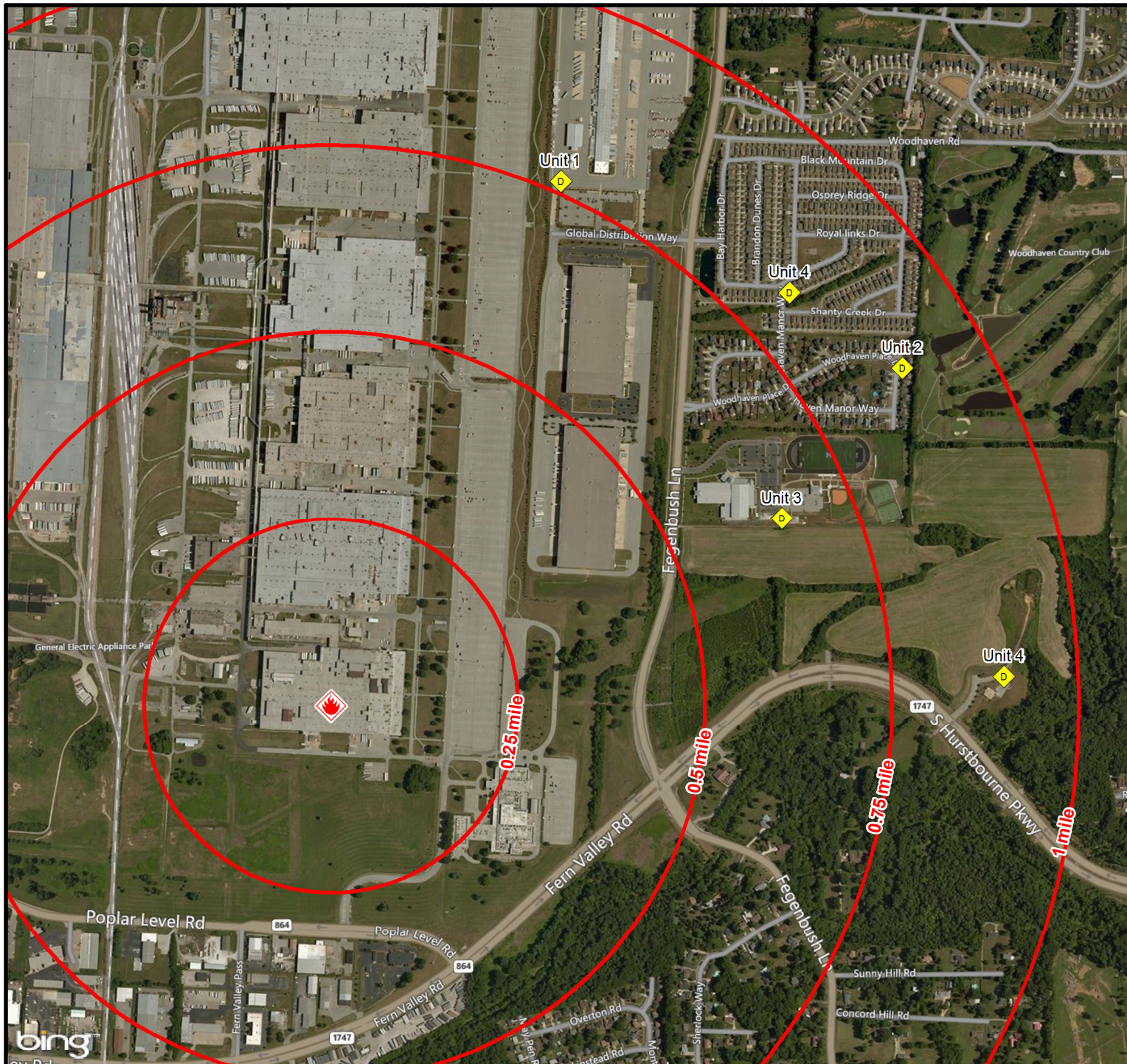
County:
Jefferson

State:
Kentucky



TETRA TECH

Date:
5/22/2015
Analyst:
dale.vonbusch



Legend



Approximate Fire Location

Fixed Air Monitoring Locations



EPA DataRAM (PM_{2.5})



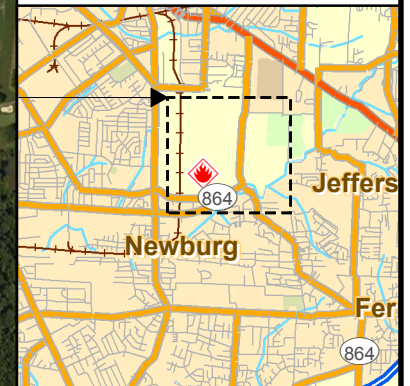
Radii from Center of Building 6



0 500 1,000
Feet

Notes:

EPA - United States Environmental Protection Agency
PM_{2.5} - Particulate matter of 2.5 micrometers or less



United States
Environmental Protection Agency
Region 4

FIGURE 4

Fixed Particulate Air Monitoring
4/4/15

Project Name: Derby Industries Fire

Project No.: TT-01-018

City:

Louisville

County:

Jefferson

State:

Kentucky



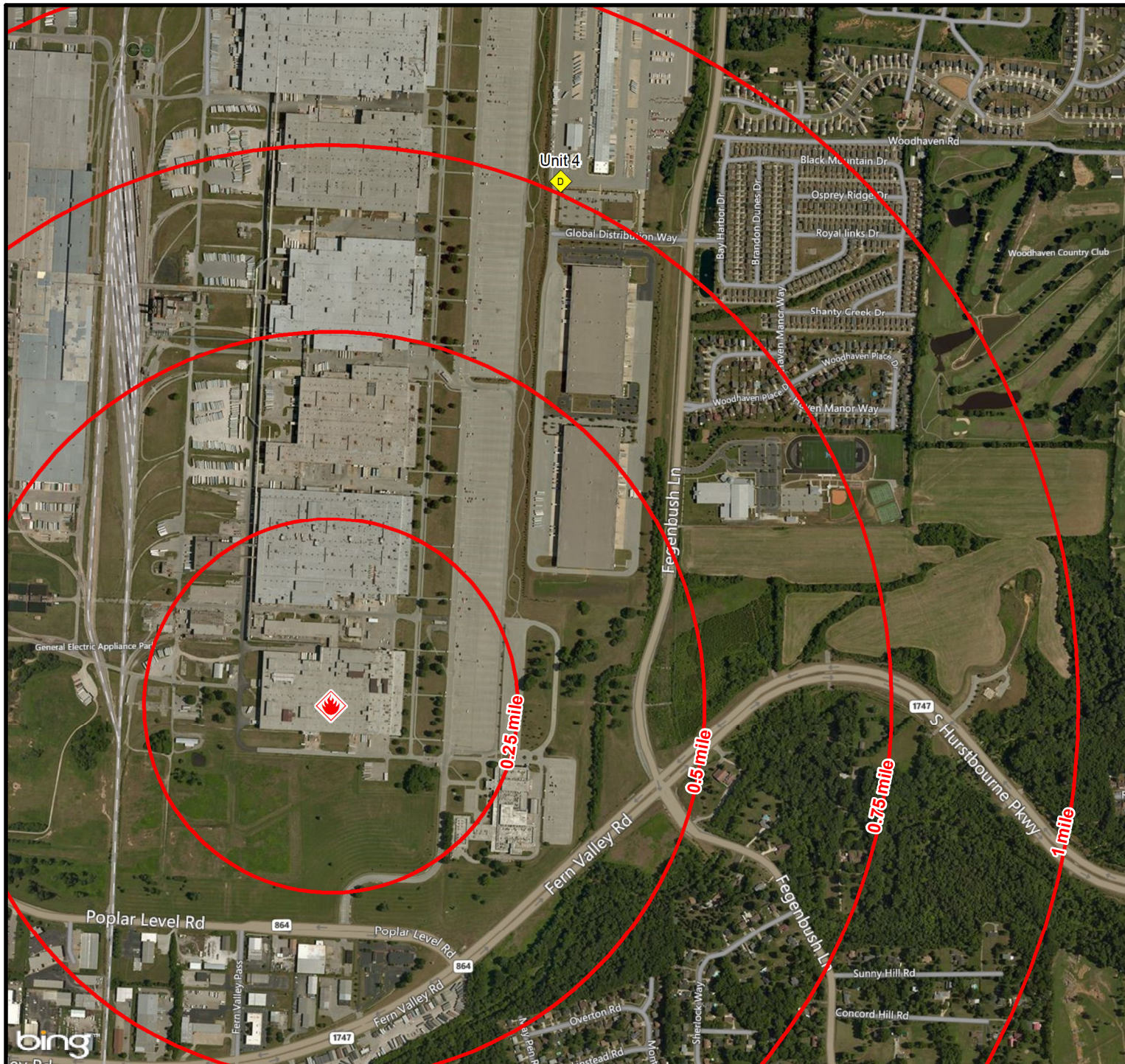
TETRA TECH

Date:


5/22/2015

Analyst:

dale.vonbusch



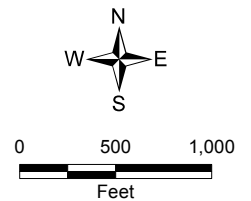
Legend

 Approximate Fire Location

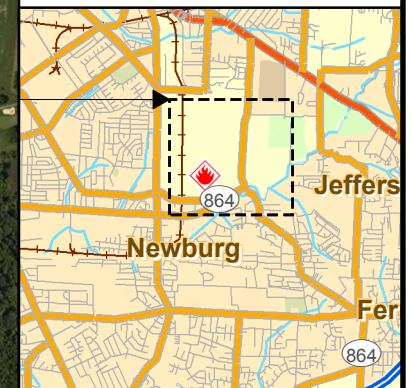
Fixed Air Monitoring Location

 EPA DataRAM (PM_{2.5})

 Radii from Center of Building 6



Notes:
EPA - United States Environmental Protection Agency
PM_{2.5} - Particulate matter of 2.5 micrometers or less



United States
Environmental Protection Agency
Region 4

FIGURE 5

Fixed Particulate Air Monitoring
4/5/15

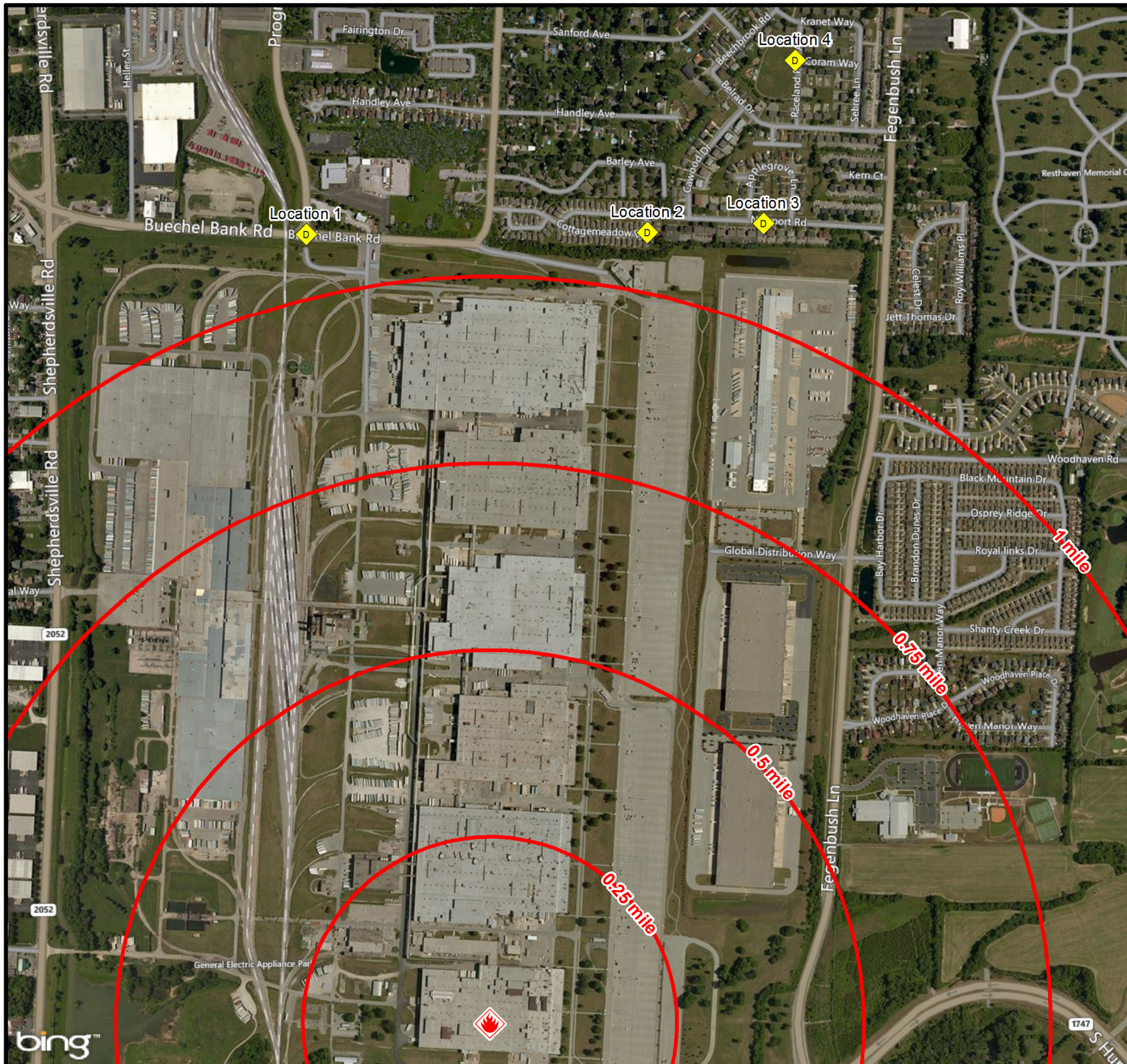
Project Name: Derby Industries Fire

Project No.: TT-01-018

City: Louisville **County:** Jefferson **State:** Kentucky



Date:
5/22/2015
Analyst:
dale.vonbusch



Legend



Approximate Fire Location

Mobile Air Monitoring Locations



10:00-11:00 hours (PM_{2.5})

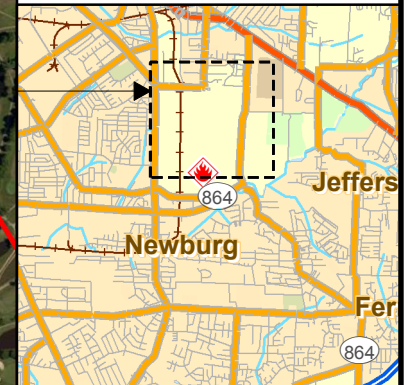


Radii from Center of Building 6



0 500 1,000
Feet

Note:
PM_{2.5} - Particulate matter of 2.5 micrometers or less



United States
Environmental Protection Agency
Region 4

FIGURE 6

Mobile Particulate Air Monitoring
4/5/15

Project Name: Derby Industries Fire

Project No.: TT-01-018

City:
Louisville

County:
Jefferson

State:
Kentucky



TETRA TECH

Date:
5/22/2015
Analyst:
dale.vonbusch

ENCLOSURE 2

PARTICULATE AIR MONITORING DATA TABLES

(Seven Pages)

Table 1
Derby Industries Fire
Air Monitoring Data for PM_{2.5} - EPA Unit 1

Located East of Building #6, in Parking Lot

Date	Time	Measurement (ug/m ³)	
		1-hr TWA	24-hr TWA
4/3/2015	18:00	0.9	0.9
4/3/2015	19:00	2.4	1.0

Located at Fern Valley Road & Poplar Level Road

Date	Time	Measurement (ug/m ³)	
		1-hr TWA	24-hr TWA
4/3/2015	20:00	128.9	129.5
4/3/2015	23:00	79.5	87.5
4/4/2015	0:00	0.4	83.7
4/4/2015	1:00	0.8	80.1
4/4/2015	2:00	1.8	76.7
4/4/2015	3:00	3.4	73.2
4/4/2015	4:00	11.5	70.0
4/4/2015	5:00	486.0	86.6
4/4/2015	6:00	10.0	83.3
4/4/2015	7:00	4.3	79.8
4/4/2015	8:00	3.0	76.3
4/4/2015	9:00	1.6	72.7
4/4/2015	10:00	1.4	69.1
4/4/2015	11:00	1.4	65.5
4/4/2015	12:00	6.6	62.1
4/4/2015	13:00	19.6	59.3
4/4/2015	14:00	3.2	55.7

Table 1
Derby Industries Fire
Air Monitoring Data for PM_{2.5} - EPA Unit 1

Located at Federal Express Facility

Date	Time	Measurement (ug/m ³)	
		1-hr TWA	24-hr TWA
4/4/2015	15:00	1.7	52.1
4/4/2015	16:00	ND	ND
4/4/2015	17:00	ND	ND
4/4/2015	18:00	ND	ND
4/4/2015	19:00	2.8	2.5
4/4/2015	20:00	0.6	2.4
4/4/2015	21:00	55.3	5.8
4/4/2015	22:00	129.3	11.1
4/4/2015	23:00	83.1	14.4
4/5/2015	0:00	4.2	14.4
4/5/2015	1:00	3.6	14.4
4/5/2015	2:00	7.8	14.6
4/5/2015	3:00	5.5	14.7
4/5/2015	4:00	3.8	14.7
4/5/2015	5:00	3.3	14.6
4/5/2015	6:00	3.3	14.6

Notes:

hr: Hour

ND: Not detected

PM_{2.5}: Particulate matter 2.5 micrometers or less

TWA: Time-Weighted Average

ug/m³: Micrograms per cubic meter

Table 2
Derby Industries Fire
Air Monitoring Data for PM_{2.5} - EPA Unit 2

Located East of Building #6, in Parking Lot

Date	Time	Measurement (ug/m ³)	
		1-hr TWA	24-hr TWA
4/3/2015	18:00	2.2	2.2
4/3/2015	19:00	4.6	2.3

Located at 7019 Astin Court

Date	Time	Measurement (ug/m ³)	
		1-hr TWA	24-hr TWA
4/3/2015	20:00	139.5	129.7
4/3/2015	23:00	65.9	139.8
4/4/2015	0:00	1.4	133.9
4/4/2015	1:00	1.9	128.0
4/4/2015	2:00	2.9	122.2
4/4/2015	3:00	3.8	116.4
4/4/2015	4:00	4.5	110.6
4/4/2015	5:00	438.8	122.9
4/4/2015	6:00	41.1	118.7
4/4/2015	7:00	5.9	113.0
4/4/2015	8:00	2.5	107.1
4/4/2015	9:00	2.2	101.3
4/4/2015	10:00	2.2	95.4
4/4/2015	11:00	2.4	89.5
4/4/2015	12:00	8.6	83.9
4/4/2015	13:00	13.5	78.5
4/4/2015	14:00	3.0	72.7

Table 2
Derby Industries Fire
Air Monitoring Data for PM_{2.5} - EPA Unit 2

Located at Black Mountain Drive

Date	Time	Measurement (ug/m ³)	
		1-hr TWA	24-hr TWA
4/4/2015	15:00	2.3	66.8
4/4/2015	16:00	ND	ND
4/4/2015	17:00	ND	ND
4/4/2015	18:00	ND	ND
4/4/2015	19:00	10.4	0.6
4/4/2015	20:00	27.2	1.7
4/4/2015	21:00	1.2	0.9
4/4/2015	22:00	3.2	1.0
4/4/2015	23:00	3.8	1.1
4/5/2015	0:00	4.4	1.3
4/5/2015	1:00	6.7	1.5
4/5/2015	2:00	11.8	2.0
4/5/2015	3:00	6.3	2.2
4/5/2015	4:00	5.1	2.4
4/5/2015	5:00	5.5	2.6
4/5/2015	6:00	5.0	2.7

Notes:

hr: Hour

ND: Not detected

PM_{2.5}: Particulate matter 2.5 micrometers or less

TWA: Time-Weighted Average

ug/m³: Micrograms per cubic meter

Table 3
Derby Industries Fire
Air Monitoring Data for PM_{2.5} - EPA Unit 3

Located at 6808 Woodrow Way

Date	Time	Measurement (ug/m ³)	
		1-hr TWA	24-hr TWA
4/3/2015	20:00	2.7	2.7
4/3/2015	23:00	25.4	2.8
4/4/2015	0:00	2.4	2.8
4/4/2015	1:00	2.9	2.9
4/4/2015	2:00	3.6	2.9
4/4/2015	3:00	4.4	3.0
4/4/2015	4:00	22.1	3.9
4/4/2015	5:00	108.8	8.3
4/4/2015	6:00	3.8	8.4
4/4/2015	7:00	3.1	8.5
4/4/2015	8:00	2.5	8.5
4/4/2015	9:00	2.2	8.5
4/4/2015	10:00	2.2	8.5
4/4/2015	11:00	2.5	8.6
4/4/2015	12:00	4.4	8.7
4/4/2015	13:00	17.8	9.3
4/4/2015	14:00	11.8	9.8

Located at Mercy Academy

Date	Time	Measurement (ug/m ³)	
		1-hr TWA	24-hr TWA
4/4/2015	15:00	6.0	9.9
4/4/2015	16:00	ND	ND
4/4/2015	17:00	ND	ND
4/4/2015	18:00	ND	ND
4/4/2015	19:00	17.5	4.6
4/4/2015	20:00	15.8	5.1
4/4/2015	21:00	3.3	3.7
4/4/2015	22:00	3.9	3.7
4/4/2015	23:00	4.7	3.7
4/5/2015	0:00	4.3	3.8
4/5/2015	1:00	5.6	3.8
4/5/2015	2:00	7.4	4.0
4/5/2015	3:00	8.8	4.2
4/5/2015	4:00	6.7	4.3
4/5/2015	5:00	4.9	4.4
4/5/2015	6:00	4.9	4.4

Notes:

hr: Hour

ND: Not detected

PM_{2.5}: Particulate matter 2.5 micrometers or less

TWA: Time-Weighted Average

ug/m³: Micrograms per cubic meter

Table 4
Derby Industries Fire
Air Monitoring Data for PM - EPA Unit 4

Located at Business on South Hurstbourne Lane

Date	Time	Measurement (ug/m ³)	
		1-hr TWA	24-hr TWA
4/4/2015	18:00	2.3	2.3
4/4/2015	19:00	4.4	2.4

Located at 5831 Bay Harbor Drive

Date	Time	Measurement (ug/m ³)	
		1-hr TWA	24-hr TWA
4/4/2015	20:00	37.6	3.9
4/4/2015	21:00	124.9	194.5
4/4/2015	22:00	3.9	186.4
4/4/2015	23:00	4.9	178.4
4/5/2015	0:00	6.2	170.0
4/5/2015	1:00	7.5	162.7
4/5/2015	2:00	ND	ND
4/5/2015	3:00	ND	ND
4/5/2015	4:00	6.4	138.7
4/5/2015	5:00	4.9	130.6
4/5/2015	6:00	4.4	122.6
4/5/2015	7:00	4.5	114.5
4/5/2015	8:00	3.9	4.2

Notes:

hr: Hour

ND: Not detected

PM_{2.5}: Particulate matter 2.5 micrometers or less

TWA: Time-Weighted Average

ug/m³: Micrograms per cubic meter

Table 5
Derby Industries Fire
Mobile Air Monitoring Data for PM_{2.5}

Located East of Building #6

Date	Time	Location	Measurement (ug/m ³)
4/3/2015	15:00	1	25.1
4/3/2015	15:00	2	14.5
4/3/2015	15:00	3	5.2
4/3/2015	15:00	4	61.7
4/3/2015	15:00	5	165.2
4/3/2015	15:00	6	108.9
4/3/2015	18:00	7	835.1
4/3/2015	18:00	8	147.3
4/3/2015	18:00	9	3042.0
4/3/2015	18:00	10	63.3
4/3/2015	18:00	11	683.2
4/3/2015	18:00	12	6.1
4/3/2015	18:00	13	610.0

Located North of Appliance Park

Date	Time	Location	Measurement (ug/m ³)*
4/5/2015	10:33	1	2.4
4/5/2015	10:56	2	16.0
4/5/2015	11:15	3	8.5
4/5/2015	11:33	4	14.2

Notes:

*: Measurements shown on 4/5/15 are peak measurements over a 10-minute period.

PM_{2.5}: Particulate matter 2.5 micrometers or less

ug/m³: Micrograms per cubic meter